REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. Claims 11-19, 28-34 and 43-49 are pending.

In the Office Action, claims 11-19, 28-34 and 43-49 are rejected under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 5,937,364, to Westgard et al (hereinafter referred to as the "Westgard patent"). As discussed in further detail below, the Applicants respectfully submit that the Westgard patent teaches away from the present invention. Accordingly, the 35 U.S.C. § 103 rejection of independent claims 11, 28 and 43, and their corresponding dependent claims 12-19, 29-34 and 44-49 should be withdrawn.

The present invention relates generally to data processing systems, methods and computer program products which allow users to construct sampling plans for quality control in manufacturing environments without the restrictions associated with reliance on standard sampling plans such as those promulgated under the ANSI/ASQ Z1.9 standard. As discussed in the background section of the present application, sampling plans set forth under a standard such as ANSI/ASQ Z1.9 are generally provided as a collection of sampling plans presented in tabular and graphical form. To construct a sampling plan for a particular manufacturing quality control situation, a user has, in the past, had to study such a collection of sampling plans and select a plan from within that collection that most closely matches the desired sampling plan for the manufacturing situation (i.e., a sampling with user-selected values of error rates, power, sample size and other parameters). This is because the collection of sampling plans may not include the same criteria desired by a given user for a given manufacturing situation. Further, a user can have difficulty interpolating or extrapolating between standard-based tables of sampling plans in an effort to use desired criteria not employed in the tables, particularly if test procedures for that standard are based on a non-central t distribution.

The present invention reduces reliance on such standard-based collections of sampling plans by determining a sample statistic that truly estimates a process defect

rate. The Westgard patent does not disclose or teach the calculation of such a statistic, but rather discloses a conventional method of selecting quality control (QC) rules from a database or library of control rules.

The present invention allows for the determination of a parameter such as key defect rate (KDR) based on user-specified parameters and not an approximation of them due to the constraints of standard-based tabularized data. Further, the present invention provides for the determination of a critical value, K, between the values of an acceptable quality limit (AQL) and a KDR for ascertaining sampling plan precision. Thus, the present invention facilitates the construction of sampling plans (e.g., for either attributes data or variables data) with a flexibility that is a vast improvement over prior methods of sifting through a book of standards to obtain a sampling plan that may or may not be adequate, as stated on page 32, lines 3-5 of the present application.

By contrast, the Westgard patent discloses a conventional quality control method wherein quality control (i.e., an automatic control rule) is selected from a database or library of control rules based on limited, user-defined selection criteria. Reference is made to Fig. 1 of the Westgard patent which illustrates automatic QC selection and particularly the blocks labeled, respectively, "Select Trial QC procedures from table of power functions for candidates," "Try 90% AQA charts to find rules, N whose operating limits are above operating point," "Try 50% AQA charts if expected frequency of errors is low (<10%)," "Try 25% AQA charts if expected frequency of errors is very low (<2%)," and "Optimize type of rule, error detection, false rejection, total N." See also the selection logic screen illustrated in Fig. 4 which guides a user to select limited criteria for a QC rules database look-up operation. The afore-mentioned blocks in Fig. 1, the screen depicted in Fig. 4, and the text at column 7, lines 56-60 and column 9, lines 5-31 of the Westgard patent illustrate that a user has to look-up and modify tabularized rules to obtain QC performance based on merely an approximation of limited selection criteria input by a user (e.g., false rejection and error detection as depicted in Fig. 2). The Westgard patent therefore illustrates the disadvantages of tabularized QC data described in the

background section of the present application (i.e., restrictions on parameters or QC criteria placed on users of such tabularized data). Accordingly, the Westgard et al patent teaches away from the claimed invention wherein a parameter or critical value (e.g., KDR or a decision rule critical value) is determined and without the need for standard QC rules database look-up operations.

Independent claims 11, 28 and 43 recite: (1) inputting, or accepting into a computer, a desired sample size, a desired false alarm rate, a desired Acceptable Quality Limit (AQL) and a desired power of a sampling plan to be constructed for items that are manufactured; and (2) calculating a Key Defect Rate (KDR) from the desired sample size, the desired false alarm rate, the desired AQL and the desired power of the sampling plan for the items that are manufactured. The Westgard patent does not teach or suggest the step of calculating a KDR as claimed, that is, based on input parameters (e.g., user-defined parameters). The parameters input by a user for the method disclosed in the Westgard patent are for automated selection of a rule from a database or control rules library and not for the calculation of a parameter such as a KDR.

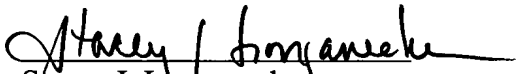
Further, the Westgard patent does not teach or suggest input of AQL for use in the calculation of KDR. The reference in the Office Action to column 5, line 38+ in the Westgard patent refers to an allowable total error specified by the CLIA standard as the proficiency testing criteria for acceptable performance. See column 3, line 55 through column 4, line 11 and column 5, line 38 through column 6, line 11 of the Westgard patent. The allowable total error is determined by an analytical quality planning algorithm and uses observed or measured values for a number of terms (e.g., see column 5, lines 44-48). Thus, the allowable total error does not teach or suggest an input of a user-desired parameter such as AQL, nor its use in calculating a parameter such as KDR.

In addition, dependent claims 12, 13, 18, 29, 30, 33, 44, 45 and 48 also recite the desired AQL that is not disclosed or suggested by the Westgard patent. With regard to claims 13, 30 and 45, the Westgard patent does not disclose graphically a relationship between acceptable number of defective items and false alarm rate, based

upon the desired AQL, the desired KDR and the desired power of the sampling plan for the items that are manufactured. The plot disclosed in the Westgard patent and referred to in the Office Action is for plotting operating points on operating specification charts prior to using AQA charts to facilitate location of a control rule in a library of control rules. This plot does not disclose or suggest displaying a relationship between acceptable number of defective items and false alarm rate, nor the displaying of this relationship based on desired parameters. Finally, while the statistical calculations in claims 17-19, 32-34 and 47-49 are not disclosed in the Westgard patent, the Office Action states that it would have been obvious to use such statistical calculations in the method disclosed therein as modified per the Examiner's suggestion to calculate process power. As stated above, the method disclosed in the Westgard patent suffers from more significant shortcomings in that it does not allow calculation of a parameter such as KDR from desired input parameters, but rather only performs an automated QC selection from a library of control rules that approximate user-specified parameters such as false rejection and error detection. As stated in column 8, lines 55-60, the user merely defines preferences that determine priority applied by a computer when making a selection from the library of control rules.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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